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SHORT REPORT

Lumbrosacral Nerve Compression Consequent on Ruptured Abdominal Aortic Aneurysm

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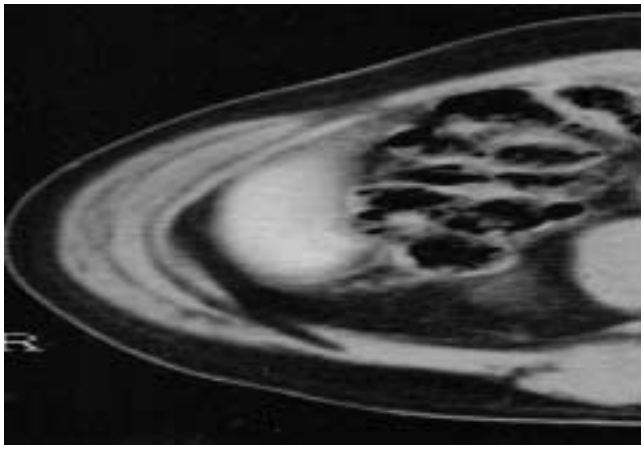
Introduction

Lumbosacral neurological deficits consequent on expansion or rupture of aortic aneurysms are rare. While some authors report an improvement in neurological symptoms after aneurysm repair,[1–4] others have reported a less favourable outcome.[5]

Crosby *et al.*[6] have reported paralysis of a leg after elective abdominal aortic aneurysm repair associated with ischaemia on the first postoperative day, requiring curative femoro–femoral bypass. In this, and in all the other cases described, the mechanism of neurological injury has been shown to be compression of lumbar sacral nerves by aneurysmal expansion, or by haematoma consequent on rupture.



[Fig. 1.]

Case Report

A 67-year-old man with a known 3.5 cm infra renal abdominal aortic aneurysm presented with a 10 day history of low back pain. Examination revealed a pulsatile tender mass in the left iliac fossa with no palpable lower limb pulses. A CT scan with contrast demonstrated a ruptured abdominal aortic aneurysm with a retroperitoneal haematoma to the left of the abdomen extending from renal hilum to pelvis (Fig. 1). No contrast was seen below the level of the aneurysm.

Successful emergency repair was undertaken with an aorto-bi-iliac graft. One week later after epidural catheter removal, he was noted to have complete quadriceps weakness (0/5) and an absent knee jerk on the left side, with loss of light touch and pain sensation over the L2, 3 and 4 dermatomes of the left leg.

Lumbar spine x-rays revealed L5/S1 disc space narrowing but no other abnormality. A subsequent CT scan showed a periaortic fluid collection posterior to the graft and extending to the left psoas muscle. MRI confirmed the CT findings of residual haematoma consequent on his ruptured aneurysm. With time his symptoms improved and a CT at 7 months showed resolution of the haematoma (Fig. 2).

Discussion

Lumbosacral plexus neuropathy rarely complicates leaking or expanding abdominal aortic aneurysms. We describe a unilateral L2, 3 and 4 lesion due to a left sided haematoma following repair of a rupture aortic aneurysm.

The anatomical basis for compression of the femoral

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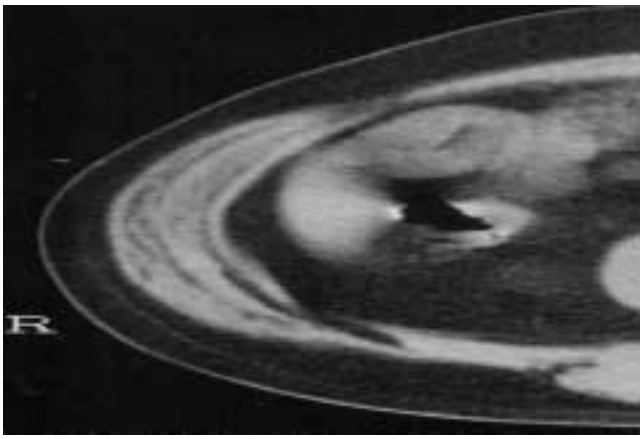

[Fig. 2.]

nerve by retroperitoneal haemorrhage can be explained by its course. It descends through the fibres of the psoas muscle, emerging from its lower lateral border and passing between the psoas and iliacus muscles to run under the inguinal ligament and into the thigh. Haemorrhage into this area is contained by fascia overlying the muscles and the contained haematoma can exert pressure on the femoral nerve. This mechanism has been confirmed experimentally by Nobel *et al.*[7] by injecting latex into this area in cadavers which resulted in compression and stretching of the femoral nerve in different parts of its course.

Our case, together with those previously described, serves as a reminder to consider the presence of abdominal aortic aneurysm in older patients presenting with femoral or other lumbosacral symptoms.

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